



AN ISO 9001 : 2008 COMPANY & NABL ACCREDITED LABORATORY AS PER ISO/IEC 17025:2005

4, 7TH MAIN MALLESWARAM, BANGALORE -3

Certificate No.: TC-5548

QC ABSTRACT

NAME OF WORK: Construction of Culverts and Improvements of Drains at Saraipalya Surrounding Area in Ward No. 06 Byatarayanapura Sub Division.

SL NO	Item Of Work	Name of Test	Frequency of Test/Quantity	Executed Quantity	Number of Tests Required	Number of Tests Conducted
Materials						
1	Cement	Fineness by dry sieving	One Test		1	1
		Finess by Air permeability method	One Test		1	1
		Density	One Test		1	1
		Standard Consistency	One Test		1	1
		Initial Setting time	One Test		1	1
		Final Setting time	One Test		1	1
		Soundness (Le Chatelier's Method)	One Test		1	1
2	Coarse aggregate(40 mm down size)	SIEVE ANALYSIS	One Test		1	1
		Flakiness Index	One Test		1	1
		Elongation Index	One Test		1	1
		Specific Gravity	One Test		1	1
		Bulk Density(Loose)	One Test		1	1
		Bulk Density(Compacted)	One Test		1	1
		Water Absorption	One Test		1	1
3	Coarse aggregate(20 mm down size)	SIEVE ANALYSIS	One Test		1	1
		Flakiness Index	One Test		1	1
		Elongation Index	One Test		1	1
		Specific Gravity	One Test		1	1
		Bulk Density(Loose)	One Test		1	1
		Bulk Density(Compacted)	One Test		1	1
		Water Absorption	One Test		1	1
		Aggregate crushing Value	One Test		1	1
		Aggregate Impact Value	One Test		1	1
		SIEVE ANALYSIS	One Test		1	1
4	Fine aggregate	Water Absorption	One Test		1	1
		Specific Gravity	One Test		1	1
		Material finer than 75 micron	One Test		1	1
		Core Compressive Strength	One Test		1	1
5	Precast (100mm)	Corrected Cylinder Compressive Strength	One Test		1	1
		Equivalent Cube Compressive Strength	One Test		1	1
		Core Compressive Strength	One Test		1	1
6	Precast (250mm)	Corrected Cylinder Compressive Strength	One Test		1	1
		Equivalent Cube Compressive Strength	One Test		1	1
		Core Compressive Strength	One Test		1	1

ಸಹಾಯಕ ಅಧೀಕ್ಷಕರು
ಜಿಲ್ಲಾ ಪ್ರಯೋಗಾಲಯ ಬಿಜಿ ಎಫ್

28.05.2024
ಸಹಾಯಕ ಸಾಮಗ್ರಿ ಅಧೀಕ್ಷಕರು
ಜಿಲ್ಲಾ ಪ್ರಯೋಗಾಲಯ ಬಿಜಿ ಎಫ್
ಬಿ.ಜಿ.ಎಂ.ಒ. ಬೆಂಗಳೂರು-24

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HIGHWAY & BUILDING MATERIALS TESTING LABORATORY | STRUCTURAL
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Format No: CP/TF/01

TEST REPORT OF PHYSICAL PROPERTIES OF CEMENT - 53 Grade

Lab ID : CP-2020-02-29-106 Date: 05-03-20
Customer : Assistant Executive Engineer, Byatarayanapura Sub Division, BBMP, Bangalore.
Address : Byatarayanapura Sub Division, BBMP, Bangalore.
Project Name : Construction of Culverts and Improvements of Drains at Saraipalya Surrounding Area in Ward No. 06 Byatarayanapura Sub Division.
Agency : Sri. Lakshman P #29, 3rd Cross, Canara Bank Colony, Dwaraka Nagar, Chandra Layout Vijayanagara, Bangalore-560040
Customer's Reference : BBMP/EE/BTP/WO/196/2019-20
Source of Sample : Sample supplied by Agency
Sample Condition : Satisfactory
Date of Receipt : 02-03-20
Sample Type : Birla Super 53grade
Reference to BIS codes : IS 12269 : 2013, 53 Grade Ordinary Portland cement Specification , IS 4031 (Part 1,2 3,4,5, 6,11):1988
IS 4031 Part 1 DETERMINATION OF FINENESS BY DRY SIEVING, Clause 4.4
IS 4031 Part 2, Determination of Fineness by Blaine Air Permeability Method, Clause 5
IS 4031 Part 3, Determination of Soundness, Clause 5, Clause 6
IS 4031 Part 4, Determination of Consistency of Standard Cement Paste, Clause 5
IS 4031 Part 5, Determination of Initial & Final Setting Time, Clause 5
IS 4031 Part 11, DETERMINATION OF DENSITY , Clause 6
Date of test : 03-03-20
Environmental Conditions during test : Temperature: 26°C
Humidity: 72%

Sl.No.	Physical properties	Results	Requirement as per IS 12269: 2013
1	Fineness by dry sieving (%)	2.1	—
2	Finess by Air permeability method (m ² /kg,Min)	284.5	225m ² /kg, Min
3	Density (gm/cc)	3.13	—
4	Standard Consistency (%)	28%	Not specified
5	Initial Setting time	155 minutes	Not less than 30 minutes
6	Final Setting time	260 minutes	Not more than 600 minutes
7	Soundness (Le Chatelier's Method)	2mm	Not more than 10 mm

Note:

The results pertain to the samples received and tested.
All information furnished by Customer/Representative
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Samples will be disposed after 90 days from the date of issue of test certificate

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ಸಹಾಯಕ ಕಲೆಕ್ಟರ್ ಪಾಲಿಕೆ ಅಭಿಯಂತರರು
ದಿ.ವಿ.ಎಂ.ಪಿ. ಬೆಂಗಳೂರು

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****End of Report****



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Authorized Signatory
Quality Manager



Format No: CP/TF/01

TEST REPORT ON COARSE AGGREGATES

Lab ID : CP-2020-02-29-106 Date: 05-03-20

Customer : Assistant Executive Engineer, Byatarayanapura Sub Division, BBMP, Bangalore.

Address : Byatarayanapura Sub Division, BBMP, Bangalore.

Project Name : Construction of Culverts and Improvements of Drains at Saraipalya Surrounding Area in Ward No. 06 Byatarayanapura Sub Division.

Agency : Sri. Lakshman P #29, 3rd Cross, Canara Bank Colony, Dwaraka Nagar, Chandra Layout Vijayanagara, Bangalore-560040

Customer's Reference : BBMP/EE/BTP/WO/196/2019-20

Source of Sample : Sample supplied by Agency

Sample condition : Satisfactory

Date of Receipt : 02-03-20

Sample Type : 40mm down size coarse aggregate

Reference to BIS codes : IS: 383:2016 (Specification for Coarse and fine Aggregates)
IS: 2386 :1963(Part - 1,3,4) RA2011
IS 2386 Part 1: Particle Size and Shape
IS 2386 Part 3: Specific gravity, Density, Voids, Water Absorption
IS 2386 Part 4: Mechanical Properties

Date of test : 02-03-20

SIEVE ANALYSIS (PARTICLE SIZE DISTRIBUTION) OF 40MM DOWN COARSE AGGREGATE:

Total weight taken : 15000 grams

Sample No.	Sieve No.	Weight Retained in gms	Cumulative Weight Retained in gms	% Cumulative Weight Retained	% Passing	Required as per IS 383:2016
1	80 mm	0	0	0.0	100	100
2	40 mm	214	214	1.4	98.6	90-100
3	20 mm	7254	7468	49.8	50.2	30-70
4	10 mm	4442	11910	79.4	20.6	10-35
5	4.75 mm	2685	14595	97.3	2.7	0-5
6	Pan	405	15000	100.0	0	---

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TEST REPORT ON COARSE AGGREGATES

Lab ID

: CP-2020-02-29-106

Date: 05-03-20

PHYSICAL PROPERTIES

PHYSICAL PROPERTIES			
Sl.no	Tests	Result	Requirements as per IS:383-2016
1	Flakiness Index(%)	10.6	Combined Flakiness & Elongation Index Shall not Exceed 40% for Uncrushed & Crushed Aggregate
2	Elongation Index(%)	12.3	
3	Specific Gravity	2.64	—
4	Bulk Density(Loose) (Kg/l)	1.49	—
5	Bulk Density(Compacted) (Kg/l)	1.52	—
6	Water Absorption(%)	0.17	—

Note:

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4, 7TH MAIN MALLESWARAM, BANGALORE -3

Certificate No.: TC-5548

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TEST REPORT ON COARSE AGGREGATES

Lab ID : CP-2020-02-29-106 Date: 04-03-20
 Customer : Assistant Executive Engineer, Byatarayanapura Sub Division, BBMP, Bangalore.
 Address : Byatarayanapura Sub Division, BBMP, Bangalore.
 Project Name : Construction of Culverts and Improvements of Drains at Saraipalya Surrounding Area in Ward No. 06 Byatarayanapura Sub Division.
 Agency : Sri. Lakshman P #29, 3rd Cross, Canara Bank Colony, Dwaraka Nagar, Chandra Layout Vijayanagara, Bangalore-560040
 Customer Reference : BBMP/EE/BTP/WO/196/2019-20
 Source of Sample : Sample supplied by Agency
 Sample Condition : Satisfactory
 Date of Receipt : 02-03-20
 Sample Type/ Size : 20mm down size coarse aggregate
 Reference to BIS codes : IS: 383:2016 (Specification for Coarse and fine Aggregates)
 IS: 2386 :1963(Part - 1,3,4) RA2011
 IS 2386 Part 1: Particle Size and Shape
 IS 2386 Part 3: Specific gravity, Density, Voids, Water Absorption
 IS 2386 Part 4: Mechanical Properties
 Date of test : 02-03-20

SIEVE ANALYSIS (PARTICLE SIZE DISTRIBUTION) OF 20MM DOWN COARSE AGGREGATE:

Total weight taken		5000		grams		Required as per IS 383:2016
Sample No.	Sieve No.	Weight Retained in gms	Cumulative Weight Retained in gms	% Cumulative Weight Retained	% Passing	
1	40 mm	0	0	0	100	100
2	20 mm	237	237	4.7	95.3	90-100
3	10 mm	2544	2781	55.6	44.4	25-55
4	4.75 mm	2107	4888	97.8	2.2	0-10
5	Pan	112	5000	100	0	-

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TEST REPORT ON COARSE AGGREGATES

Lab ID : CP-2020-02-29-106

Date: 04-03-20

PHYSICAL PROPERTIES

Sl.no	Tests	Result	Requirements as per IS:383-2016
1	Flakiness Index(%)	10.7	Combined Flakiness & Elongation Index Shall not Exceed 40% for Uncrushed & Crushed Aggregate
2	Elongation Index(%)	11.4	
3	Specific Gravity	2.65	—
4	Bulk Density(Loose) (Kg/l)	1.53	—
5	Bulk Density(Compacted) (Kg/l)	1.57	—
6	Water Absorption(%)	0.19	—
7	Aggregate crushing Value(%)	25.6	Max 30% for Aggregates to be used in concrete for wearing Surface, In case Aggregate Crushing Value Exceeds 30% then the test for ten percent fines should be conducted for Aggregates to be used in concrete other than for wearing Surface.
8	Aggregate Impact Value(%)	22.5	30% for Aggregates to be used in concrete for wearing Surface, 45% for Aggregates to be used in concrete other than for wearing Surface.

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Quality Manager



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End of Report



Format No: CP/TF/01

TEST REPORT OF FINE AGGREGATE

Date: 04-03-20

Lab ID : CP-2020-02-29-106

Customer : Assistant Executive Engineer, Byatarayanapura Sub Division, BBMP, Bangalore.

Address : Byatarayanapura Sub Division, BBMP, Bangalore.

Project Name : Construction of Culverts and Improvements of Drains at Saraipalya Surrounding Area in Ward No. 06 Byatarayanapura Sub Division.

Agency : Sri. Lakshman P #29, 3rd Cross, Canara Bank Colony, Dwaraka Nagar, Chandra Layout Vijayanagara, Bangalore-560040

Customer's Reference : BBMP/EE/BTP/WO/196/2019-20

Source of Sample : Sample supplied by Agency

Sample Condition : Satisfactory

Date of Receipt : 02-03-20

Sample Type : Fine Aggregate

Reference to BIS codes : IS 383 : 2016 (Specification for Coarse and fine Aggregates)
IS: 2386 :1963(Part - 1, 3) RA2012
IS 2386 Part 1: Particle Size and Shape
IS 2386 Part 3: Specific gravity, Density, Voids, Water Absorption

Date of test : 02-03-20

Total weight taken : 1000 grams

Sl.no	Sieve Size	Weight Retained (gms)	Cumulative Weight Retained (gms)	% Cumulative Weight Retained	% Passing	Requirement as per IS 383:2016			
						Grading Zone I	Grading Zone II	Grading Zone III	Grading Zone IV
1	10 mm	0	0	0.0	100.0	100	100	100	100
2	4.75 mm	27	27	2.7	97.3	90-100	90-100	90-100	95-100
3	2.36 mm	55	82	8.2	91.8	60-95	75-100	85-100	95-100
4	1.18 mm	239	321	32.1	67.9	30-70	55-90	75-100	90-100
5	600 micron	205	526	52.6	47.4	15-34	35-59	60-79	80-100
6	300 micron	203	729	72.9	27.1	5-20	8-30	12-40	15-50
7	150 micron	191	920	92.0	8.0	0-10	0-10	0-10	0-15
8	Pan	80	1000	100.0	0.0	---	---	---	---

Result : The tested Sample Conforms to Grading Zone II

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ಮಾಲೀಕರ ವಿಭಾಗ
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05/03/20
ಸಹಾಯಕ ಅಧೀಕ್ಷಕರ ವಿಭಾಗ
ಬೆಂಗಳೂರು ಮಹಾನಗರ ಪಾಲಿಕೆ



AKK



TEST REPORT OF FINE AGGREGATE

Lab ID : CP-2020-02-29-106

Date: 04-03-20

PHYSICAL PROPERTIES

Sl.no	Tests	Result	Requirements as per IS 383:2016
1	Water Absorption(%)	1.5	—
2	Specific Gravity	2.59	—
3	Material finer than 75 micron(%)	6.9	Uncrushed fine Aggregate Max 3%, Crushed Fine aggregate Max 15%, Mixed Fine aggregate Max 12%, Manufactured Fine aggregate Max 10%

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Format No: CP/TF/01

TEST REPORT OF PRECAST COVER SLAB

Date: 16-03-20

Lab ID : CP-2020-02-29-106
Customer : Assistant Executive Engineer, Byatarayanapura Sub Division, BBMP, Bangalore.
Address : Byatarayanapura Sub Division, BBMP, Bangalore.
Project Name : Construction of Culverts and Improvements of Drains at Saraipalya Surrounding Area in Ward No. 06 Byatarayanapura Sub Division.
Agency : Sri. Lakshman P #29, 3rd Cross, Canara Bank Colony, Dwaraka Nagar, Chandra Layout Vijayanagara, Bangalore-560040
Customer's Reference : BBMP/EE/BTP/WO/196/2019-20
Source of Sample : Sample supplied by Agency
Sample Condition : Satisfactory
Date of Receipt : 12-03-20
Sample Type /Size : Precast Cover Slab (100mm)
Reference to BIS codes : IS: 516 - 1959 Methods of Tests for Strength of Concrete
Date of test : 12/03/2020

SL No.	Identification Mark	Diameter of the core	Height of the core	Weight of the core	Area	Failure Load	Core Compressive strength	Corrected Cylinder Compressive strength	Equivalent Cube Compressive strength
		(mm)	(mm)	(kg)	(Sq.mm)	(KN)	(N/mm ²)	(N/mm ²)	(N/mm ²)
1	Cover Slab-1	75.51	100.48	1.116	4477	80.9	18.1	16.8	21.0
2	Cover Slab-2	75.49	100.52	1.122	4475	82.3	18.4	17.1	21.4
3	Cover Slab-3	75.50	100.51	1.118	4476	81.5	18.2	16.9	21.2

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ಶ್ರೀ. ಲಕ್ಷ್ಮಣ್ ಪ. #29, 3ನೇ ಕ್ರಾಸ್, ಕನಾರಾ ಬ್ಯಾಂಕ್ ಕಾಲನಿ, ದ್ವಾರಕಾ ನಗರ, ಚಂದ್ರಾ ಲೇಔಟ್, ವಿಜಯನಗರ, ಬೆಂಗಳೂರು-560040
ಬಿ.ಎಂ.ಪಿ. ಬೆಂಗಳೂರು
ಪುನರಾವೇಶಿ ಸರ್ಕಾರಿ ಶಾಲೆ
ಬಿ.ಎಂ.ಪಿ. ಬೆಂಗಳೂರು
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TEST REPORT OF PRECAST COVER SLAB

Date: 16-03-20

Lab ID	:	CP-2020-02-29-106
Customer	:	Assistant Executive Engineer, Byatarayanapura Sub Division, BBMP, Bangalore.
Address	:	Byatarayanapura Sub Division, BBMP, Bangalore.
Project Name	:	Construction of Culverts and Improvements of Drains at Saraipalya Surrounding Area in Ward No. 06 Byatarayanapura Sub Division.
Agency	:	Sri. Lakshman P #29, 3rd Cross, Canara Bank Colony, Dwaraka Nagar, Chandra Layout Vijayanagara, Bangalore-560040
Customer's Reference	:	BBMP/EE/BTP/WO/196/2019-20
Source of Sample	:	Sample supplied by Agency
Sample Condition	:	Satisfactory
Date of Receipt	:	12-03-20
Sample Type /Size	:	Precast Cover Slab (250mm)
Reference to BIS codes	:	IS: 516 - 1959 Methods of Tests for Strength of Concrete
Date of test	:	12/03/2020

SL No.	Identification Mark	Diameter of the core	Height of the core	Weight of the core	Area	Failure Load	Core Compressive strength	Corrected Cylinder Compressive strength	Equivalent Cube Compressive strength
		(mm)	(mm)	(kg)	(Sq.mm)	(KN)	(N/mm ²)	(N/mm ²)	(N/mm ²)
1	Cover Slab-1	200.51	250.48	3.116	31570	240.9	7.6	7.1	8.9
2	Cover Slab-2	200.49	250.52	3.122	31564	242.3	7.7	7.1	8.9
3	Cover Slab-3	200.50	250.51	3.118	31567	241.5	7.7	7.1	8.9

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